

GEOCAULON LIVIDUM IN NEW ENGLAND

In July 1964 the Gray Herbarium asked me if I could assist the late Dr. Hans Stauffer of Zurich, Switzerland in finding *Geocaulon lividum* (Richards.) Fern, in the White Mountains. Dr. Stauffer came to my camp in Dummer, New Hampshire, and we spent two days searching for it on Imp Mt. and Mt. Clinton with no success.

Geocaulon has not been collected frequently in New England; the herbarium of the New England Botanical Club contains fifteen collections, the Gray Herbarium five, three of which are duplicates of sheets in the Botanical Club, and the herbarium of the Boston Society of Natural History has seven, all duplicates. The most recent collection was made in 1941 but most of the collections were made prior to 1910. These collections come from twelve localities, Lubec and Roque Bluffs in coastal Washington County, Maine, Katahdin in Piscataquis County, Bald Mt. in Somerset County, Mts. Abraham and Saddleback in Franklin County and Goose Eye in Oxford County; Mt. Ingalls, Imp Mt., Mt. Clinton and the Basin Rim in Cöös County, New Hampshire; and Mt. Mansfield in Lamoille County, Vermont.

My acquaintance with the species was limited to finding it once on Katahdin in 1928. On 27 August 1964 I searched for the plant on the Basin Rim and found it growing on the slopes of both Mt. Meader and Mt. Royce and a week later I visited Goose Eye and Mt. Carlo in the Maine portion of the Mahoosuc Trail and found five stations. In June 1965 I revisited Mt. Clinton and finally found a few sterile stems about a quarter of a mile south of the new Mizpah Hut. A month later I again found the species on the Bondcliff Trail in Lincoln, Grafton County, New Hampshire. Apparently this is the first record for Grafton County. I was unable to find *Geocaulon* in what appeared to be favorable sites on Mt. Lafayette and Mt. Kinsman in Grafton County. The following collections are on deposit in the herbarium of the New England Botanical Club: MAINE, Oxford County, north slope of Mt. Carlo, Riley, *Harris 26803*, 1 September 1964; NEW

HAMPSHIRE, Cöos County, Webster Cliff Trail $\frac{1}{4}$ mile south of Mizpah Hut, Bean Grant, *Harris 27387*, 22 June 1965; Grafton County, Bondcliff Trail near trail to Guyot Shelter, Lincoln, *Harris 27687*, 20 July 1965.

Geocaulon lividum is not an easy species to find. The leaves, borne on low herbaceous stems, resemble very closely the leaves of blueberries and the two grow frequently together. However my initial discovery of the plant on the Basin Rim came when I noticed some foliage in the undergrowth with the characteristic purplish color that the leaves of the closely related *Comandra umbellata* assume in the late summer. The flowers are inconspicuous and drop early in the season, on the Basin Rim on 11 June 1965 they were past their prime. The berry-like fruit are showy but apparently scarce in the White Mountains. I could find only about a dozen fruit on over 500 stems I examined on the Basin Rim in August 1964 and the same ratio seemed to hold on Goose Eye and Mt. Carlo. On 31 August 1965 on the Basin Rim I could not find a single fruit on more than 1000 stems although in June some of the stems bore as many as twenty flowers or immature fruit. Gray's Manual describes the fruit as being scarlet; all I have seen have been yellow-orange.

Pease in the *Flora of Northern New Hampshire* states the habitat as, "mossy bogs on the upper parts of the secondary mountains, local (somewhat similar in distribution to *Rubus Chamaemorus*)." I found one station on Mt. Carlo in a mossy bog but all the other stations were in damp but not boggy, rather open low spruce and fir forest. On Mt. Meader some of the plants are growing in thin mossy wooded soil on ledges. *Rubus Chamaemorus* is abundant in the Mahoosucs and on Mt. Clinton but I never found *Geocaulon* growing with it. The stations varied in elevation from about 2500 feet on the Basin Rim to 4100 feet on Mt. Guyot. On Mt. Royce the stand of *Geocaulon*, which is the largest one I have found, is at an altitude only a few feet higher than a grove of mature fruiting *Quercus rubra* and *Epigaea repens*, var. *glabrifolia* is growing with the *Geocaulon*. Many of

the black spruces forming the forest cover of this station are heavily infected with *Arceuthobium pusillum*.

A thorough search for the plant in favorable habitats may reveal that *Geocaulon lividum* is a much more common plant in northern New England than present collections indicate.

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FURTHER NOTES ON CHAMAECYPARIS THYOIDES IN NEW HAMPSHIRE

Since the publication of my note (*Rhodora* 63:281-285), some additional stations in central New Hampshire have been visited, and it may be of interest to describe these briefly. These will be numbered consecutively as additions to the list previously reported.

6a. Robb Reservoir, Stoddard. Elevation 1,275. A half mile from the previously recorded station for *Chamaecyparis thyoides* in Stoddard thirteen additional clumps of these trees were found in April 1963. They were mingled with a thin stand of red maple on the northeast side of an open bog thru which the outlet of Rye Pond flows into Robb Reservoir. The cedars appeared to be sprouts from old stumps and are possibly survivors of a former larger stand that may have been killed by flooding. No reproduction or young trees were observed.

7. Ring Brook, Sutton. Elevation 950 feet. This station for *Chamaecyparis thyoides* covers an area of about 22 acres in a swamp forming the headwaters of Ring Brook. It begins about one quarter mile west of the intersection of Baker Hill Road with Chalk Pond road leading from Sutton to Lake Sunapee. The stream was dammed by beavers a few years ago resulting in the death or severe injury of red spruce and white pine but leaving red maple and the cedar little affected. On the West side of the swamp the red maple